

- (19) Japanese Patent Office (JP)  
(12) Utility Model Gazette  
(11) Laid-Open No. 123444/1983 (Showa 58)  
(P2001-154988A)  
(43) Laid-Open Date: August 22, 1983  
(51) Int.Cl.<sup>3</sup> Identification Symbol      Internal File Number  
Request for Examination Unrequested      (All pages)  
(54) Powder Aggregation Prevention Device  
(21) Utility Model Application No.19156/1982 (Showa 57)  
(22) Application Date: February 13, 1982  
(71) Applicant:  
Ricoh Company, Ltd.  
3-6, Nakamagome 1-chome, Ota-ku, Tokyo  
(72) Inventors: Noriaki IDE, Tadashi ITOU, Tokumitsu SUGIYAMA, Naomi  
NOZAKI  
c/o Ricoh Company, Ltd.  
3-6, Nakamagome 1-chome, Ota-ku, Tokyo  
(74) Agent: Patent Attorney, Toru UCHIYAMA

#### Specifications

Title of the Invention

Powder Aggregation Prevention Device

Utility Model Registration Scope of Claims

A powder aggregation prevention device comprising a tank for storing powder, a hollow, multiple-hole discharge body having multiple opening parts for emitting air into the tank, a pipe part for connecting the tank and an indraft part of a cyclone, and a fan provided in the middle of an air flow passage connecting a cyclone discharge part and the multiple-hole discharge body.

#### Detailed Description of the Invention

The present invention relates to a powder aggregation prevention device.

For example, although a toner feeding tank is provided in a copying machine which uses dry toner as a developer to replenish a predetermined development part with toner, the toner within this tank sometimes aggregates. When this aggregation occurs, a situation occurs wherein a toner feeding opening provided in the lower part of the tank is blocked and toner cannot be replenished. Since defective toner

from each hole H is sucked into the pipe 10 with air, reaches the cyclone 9, is separated from the air by a separation mechanism of the cyclone 9 and gathered in a collection room 9a in the lower section. Since there is no problem with using the toner T that has been collected in the collection room 9a as such as is if, for example, the toner is a single ingredient toner, it can be collected in the tank and put into further use. If the toner T is a two-ingredient toner, it cannot be used because the ingredient ratio of the additive may change and therefore appropriate action is taken, such as disposal. Since fine toner powder is separated as such in the cyclone 9, the fan 7 constantly sends in air which does not contain toner, which is advantageous with regard to maintenance and the holes H do not become blocked.

In addition, since the tank 1 is in effect hermetically-sealed, there is no damage, such as that due to scattered toner leaking externally and soiling the interior of the copying machine, or interfering with various functions.

Although the prevention of aggregation of the toner in a copying machine was explained in the example above, the present invention is not limited thereto and is effective when implemented when there is concern of aggregation with regards to a broad range of powder feeding tanks.

#### Brief Description of the Drawings

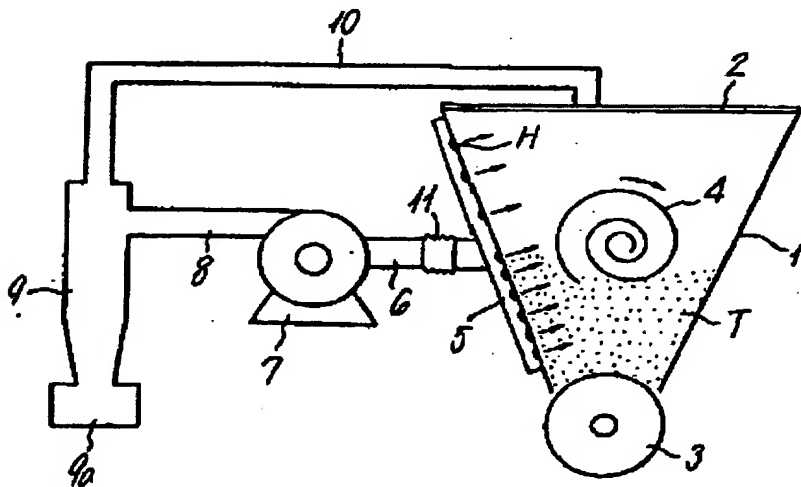
The drawing is a configuration diagram of a powder aggregation prevention device according to one embodiment of the present invention.

1 TANK

5 MULTIPLE-HOLE DISCHARGE BODY

9 CYCLONE

7 FAN



⑩ 日本国特許庁 (JP)

⑪ 実用新案出願公開

⑫ 公開実用新案公報 (U)

昭58—123444

⑬ Int. Cl.<sup>3</sup>

G 03 G 15/08

A 47 L 9/16

B 65 G 65/48

識別記号

1 1 2

庁内整理番号

7265—2H

7024—3B

6830—3F

⑭ 公開 昭和58年(1983)8月22日

審査請求 未請求

(全 1 頁)

⑮ 粉体の凝集防止装置

⑯ 実 願 昭57—19156

⑰ 出 願 昭57(1982)2月13日

⑱ 考 案 者 井出典明

東京都大田区中馬込1丁目3番  
6号株式会社リコー内

⑲ 考 案 者 伊藤正思

東京都大田区中馬込1丁目3番  
6号株式会社リコー内

⑲ 考 案 者 杉山徳光

東京都大田区中馬込1丁目3番  
6号株式会社リコー内

⑲ 考 案 者 野崎直美

東京都大田区中馬込1丁目3番  
6号株式会社リコー内

⑲ 出 願 人 株式会社リコー

東京都大田区中馬込1丁目3番  
6号

⑲ 代 理 人 弁理士 樺山亨

⑳ 実用新案登録請求の範囲

粉体を収容しているタンクと、上記タンク内に空気を噴出させる多数の開口部を有する中空状の多孔吐出体と、タンクとサイクロンの吸入部を結ぶ配管部と、サイクロン吐出部と多孔吐出体とを結ぶ空気流路の途中に設けられた送風機を有する

ことを特徴とする粉体の凝集防止装置。

図面の簡単な説明

図は本考案の一実施例としての、粉体の凝集防止装置の構成図である。

1…タンク、5…多孔吐出体、9…サイクロン、7…送風機。

